

§ 22.157

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(d) The 30-day period begins on the date the notification is submitted to the Commission via the ULS. If the notification is by mail, this date may be ascertained by:

(1) The return receipt on certified mail,

(2) The enclosure of a card to be dated and returned by the party being notified, or

(3) A reasonable estimate of the time required for the mail to reach its destination. In this case, the date when the 30-day period will expire must be stated in the notification.

(e) All channel usage conflicts discovered during the coordination process should be resolved prior to filing of the application. If the applicant is unable or unwilling to resolve a particular conflict, the application may be accepted for filing if it contains a statement describing the unresolved conflict and a brief explanation of the reasons why a resolution was not achieved.

(f) If a number of changes in the technical parameters of a proposed facility become necessary during the course of the coordination process, an attempt should be made to minimize the number of separate notifications. If the changes are incorporated into a completely revised notice, the items that were changed from the previous notice should be identified.

(g) In situations where subsequent changes are not numerous or complex, the party receiving the changed notification should make an effort to respond in less than 30 days. If the applicant believes a shorter response time is reasonable and appropriate, it should so indicate in the notice and suggest a response date.

(h) If a subsequent change in the technical parameters of a proposed facility could not affect the facilities of one or more of the parties that received an initial notification, the applicant is not required to coordinate that change with these parties. However, these parties must be advised of the change and of the opinion that coordination is not required.

[59 FR 59507, Nov. 17, 1994, as amended at 63 FR 68944, Dec. 14, 1998]

§ 22.157 Distance computation.

The method given in this section must be used to compute the distance between any two locations, except that, for computation of distance involving stations in Canada and Mexico, methods for distance computation specified in the applicable international agreement, if any, must be used instead. The method set forth in this paragraph is considered to be sufficiently accurate for distances not exceeding 475 km (295 miles).

(a) Convert the latitudes and longitudes of each reference point from degree-minute-second format to degree-decimal format by dividing minutes by 60 and seconds by 3600, then adding the results to degrees.

$$\text{LATX}_{dd} = \text{DD} + \frac{\text{MM}}{60} + \frac{\text{SS}}{3600}$$

$$\text{LONX}_{dd} = \text{DDD} + \frac{\text{MM}}{60} + \frac{\text{SS}}{3600}$$

(b) Calculate the mean geodetic latitude between the two reference points by averaging the two latitudes:

$$\text{ML} = \frac{\text{LAT1}_{dd} + \text{LAT2}_{dd}}{2}$$

(c) Calculate the number of kilometers per degree latitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$\begin{aligned} \text{KPD}_{\text{lat}} &= 111.13209 - 0.56605 \cos 2\text{ML} \\ &\quad + 0.00120 \cos 4\text{ML} \end{aligned}$$

(d) Calculate the number of kilometers per degree of longitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$\begin{aligned} \text{KPD}_{\text{lon}} &= 111.41513 \cos \text{ML} \\ &\quad - 0.09455 \cos 3\text{ML} \\ &\quad + 0.00012 \cos 5\text{ML} \end{aligned}$$

(e) Calculate the North-South distance in kilometers as follows:

$$\text{NS} = \text{KPD}_{\text{lat}} \times (\text{LAT1}_{dd} - \text{LAT2}_{dd})$$

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(f) Calculate the East-West distance in kilometers as follows:

$$EW = KPD_{lon} \times (LON1_{dd} - LON2_{dd})$$

(g) Calculate the distance between the locations by taking the square root of the sum of the squares of the East-West and North-South distances:

$$DIST = \sqrt{NS^2 + EW^2}$$

(h) Terms used in this section are defined as follows:

(1) LAT<sub>1dd</sub> and LON<sub>1dd</sub> are the coordinates of the first location in degree-decimal format.

(2) LAT<sub>2dd</sub> and LON<sub>2dd</sub> are the coordinates of the second location in degree-decimal format.

(3) ML is the mean geodetic latitude in degree-decimal format.

(4) KPD<sub>lat</sub> is the number of kilometers per degree of latitude at a given mean geodetic latitude.

(5) KPD<sub>lon</sub> is the number of kilometers per degree of longitude at a given mean geodetic latitude.

(6) NS is the North-South distance in kilometers.

(7) DIST is the distance between the two locations, in kilometers.

### § 22.159 Computation of average terrain elevation.

Average terrain elevation must be calculated by computer using elevations from a 30 second point or better topographic data file. The file must be identified. If a 30 second point data file is used, the elevation data must be processed for intermediate points using interpolation techniques; otherwise, the nearest point may be used. In cases of dispute, average terrain elevation determinations can also be done manually, if the results differ significantly from the computer derived averages.

(a) Radial average terrain elevation is calculated as the average of the elevation along a straight line path from 3 to 16 kilometers (2 and 10 miles) extending radially from the antenna site. If a portion of the radial path extends over foreign territory or water, such portion must not be included in the computation of average elevation unless the radial path again passes over United States land between 16 and 134 kilometers (10 and 83 miles) away from

the station. At least 50 evenly spaced data points for each radial should be used in the computation.

(b) Average terrain elevation is the average of the eight radial average terrain elevations (for the eight cardinal radials).

(c) For locations in Dade and Broward Counties, Florida, the method prescribed above may be used or average terrain elevation may be assumed to be 3 meters (10 feet).

### § 22.161 Application requirements for ASSB.

Applications for base stations employing amplitude compandored single sideband modulation (ASSB) must contain the following information:

(a) The application must describe fully the modulation characteristics, emission and occupied bandwidth, and specify the center frequency of the emission for each channel, carrier frequency, and pilot channels, if any. The emission must fall completely within a channel assignable for two-way operation in the Paging and Radiotelephone Service, Rural Radiotelephone Service or Offshore Radiotelephone Service.

(b) The application must contain interference studies between stations within an authorized bandwidth, whether FM-to-ASSB, ASSB-to-FM, or ASSB-to-ASSB in accordance with the following: For ASSB stations, the transmitter nearest to the protected station must be used. The effective radiated power in the direction of the protected station must be the sum of the peak effective radiated power of all transmitters in the group, in the direction of the protected station. The antenna center of radiation height above average terrain must be the highest antenna center of radiation height of any transmitter in the group in the direction of the protected station. The channel of the group is assumed to be the same as that of the protected station (co-channel), and studies must be made in accordance with § 22.567.

### § 22.165 Additional transmitters for existing systems.

A licensee may operate additional transmitters at additional locations on the same channel or channel block as